

1 I CLAIM:

- 2 1. A medical device comprising:
3 a body;
4 a lumen extending from a first lumen opening formed in the body to a second
5 lumen opening formed in the body, the lumen adapted to receive a length
6 of suture; and
7 a first needle guide channel extending from a first needle guide channel opening
8 formed in the body to a second needle guide channel opening formed in
9 the body;
10 wherein the lumen and the first needle guide channel are configured in operative
11 relation with each other such that a needle that is backloaded into the first
12 needle guide channel will be advanced out of the first needle guide
13 channel by pulling on a length of suture that is connected to the needle and
14 threaded through the lumen.
- 15 2. The medical device of claim 1, wherein the first needle guide channel is arcuate
16 shaped.
- 17 3. The medical device of claim 1, further comprising a handle coupled to the body.
- 18 4. The medical device of claim 3, wherein the handle is coupled to the body by a
19 connector piece.
- 20 5. The medical device of claim 4, wherein the connector piece is bendable such that
21 it can be fixed in a variety of positions.
- 22 6. The medical device of claim 1, wherein a portion of the body is tapered.
- 23 7. The medical device of claim 1, further comprising:
24 one or more additional needle guide channels, each extending from its own first
25 needle guide channel opening formed in the body to its own second needle
26 guide channel opening formed in the body;
27 wherein each of the one or more additional needle guide channels is configured in
28 operative relation with the lumen such that a needle that is backloaded into
29 any of the one or more additional needle guide channels will be advanced
30 out of the additional needle guide channel by pulling on a length of suture
31 that is connected to the needle and threaded through the lumen.

- 1 8. The medical device of claim 7, wherein one of the one or more additional needle
2 guide channels are arcuate shaped.
- 3 9. The medical device of claim 7, wherein each of the one or more additional needle
4 guide channels and the first needle guide channel is arcuate shaped.
- 5 10. The medical device of claim 7, wherein the first needle guide channel and each of
6 the one or more additional needle guide channels are circumferentially positioned around
7 the body.
- 8 11. The medical device of claim 10, wherein the first needle guide channel and each
9 of the one or more additional needle guide channels are equidistant from each other.
- 10 12. A medical device configured to facilitate the placement of one or more needles in
11 a living patient, the medical device comprising:
12 a body;
13 a lumen extending from a first lumen opening formed in the body to a second
14 lumen opening formed in the body, the lumen adapted to receive a length
15 of suture; and
16 a first needle guide channel extending from a first needle guide channel opening
17 formed in the body to a second needle guide channel opening formed in
18 the body, the first needle guide channel having an arcuate shape.
- 19 13. The medical device of claim 12, further comprising a handle coupled to the body.
- 20 14. The medical device of claim 13, wherein the handle is coupled to the body by a
21 connector piece.
- 22 15. The medical device of claim 14, wherein the connector piece is bendable such that
23 it can be fixed in a variety of positions.
- 24 16. The medical device of claim 12, wherein a portion of the body is tapered.
- 25 17. The medical device of claim 12, further comprising:
26 one or more additional needle guide channels, each extending from its own first
27 needle guide channel opening formed in the body to its own second needle
28 guide channel opening formed in the body, each of the one or more
29 additional needle guide channels having an arcuate shape.

- 1 18. The medical device of claim 12, wherein the first needle guide channel and each
2 of the one or more additional needle guide channels are circumferentially positioned
3 around the body.
- 4 19. The medical device of claim 18, wherein the first needle guide channel and each
5 of the one or more additional needle guide channels are equidistant from each other.
- 6 20. A medical device comprising:
7 a body;
8 a lumen extending from a first lumen opening formed in the body to a second
9 lumen opening formed in the body, the lumen adapted to receive a length
10 of suture;
11 a first needle guide channel extending from a first needle guide channel opening
12 formed in the body to a second needle guide channel opening formed in
13 the body;
14 a first needle adapted to be at least partially contained in the first needle guide
15 channel; and
16 a length of suture attachable to the first needle;
17 wherein the lumen and first needle guide channel are configured in operative
18 relation with each other such that when the needle is backloaded into the
19 first needle guide channel, the needle will be advanced out of the first
20 needle guide channel by pulling on the length of suture after attaching the
21 length of suture to the needle and threaded through the lumen.
- 22 21. The medical device of claim 20, wherein the first needle guide channel is arcuate
23 shaped.
- 24 22. The medical device of claim 20, further comprising a handle coupled to the body.
- 25 23. The medical device of claim 22, wherein the handle is coupled to the body by a
26 connector piece.
- 27 24. The medical device of claim 23, wherein the connector piece is bendable such that
28 it can be fixed in a variety of positions.
- 29 25. The medical device of claim 20, wherein a portion of the body is tapered.
- 30 26. The medical device of claim 20, further comprising:

- 1 one or more additional needle guide channels, each extending from its own first
2 needle guide channel opening formed in the body to its own second needle
3 guide channel opening formed in the body, each of the one or more
4 additional needle guide channels having its own additional needle adapted
5 to be at least partially contained in the additional needle guide channel;
6 one or more additional needles adapted to be at least partially contained in a
7 corresponding additional needle guide channel; and
8 one or more additional lengths of suture attachable to a corresponding additional
9 needle;
10 wherein each of the one or more additional needle guide channels is configured in
11 operative relation with the lumen such that when the additional needle
12 corresponding to the additional needle guide channel is backloaded into
13 the additional needle guide channel, the additional needle will be
14 advanced out of the additional needle guide channel by pulling on the
15 additional length of suture after the additional length of suture is
16 connected to the additional needle and threaded through the lumen.
- 17 27. The medical device of claim 26, wherein one of the one or more additional needle
18 guide channels is arcuate shaped.
- 19 28. The medical device of claim 26, wherein each of the one or more additional
20 needle guide channels and the first needle guide channel are arcuate shaped.
- 21 29. The medical device of claim 26, wherein the first needle guide channel and each
22 of the one or more additional needle guide channels are circumferentially positioned
23 around the body.
- 24 30. The medical device of claim 29, wherein the first needle guide channel and each
25 of the one or more additional needle guide channels are equidistant from each other.
- 26 31. A medical device comprising:
27 a body;
28 a lumen extending from a first lumen opening formed in the body to a second
29 lumen opening formed in the body, the lumen adapted to receive a length
30 of suture; and

- 1 a first needle guide channel extending from a first needle guide channel opening
2 formed in the body;
3 wherein the lumen and first needle guide channel are configured in operative
4 relation with each other such that when a length of suture is threaded
5 through the lumen and is connected to a needle that is backloaded into the
6 first needle guide channel, and the length of suture is pulled in a first
7 direction, the needle is advanced out of the needle guide channel in a
8 second direction,
9 wherein the first direction has a positive longitudinal component and the second
10 direction has a negative longitudinal component.
- 11 32. The medical device of claim 31, wherein the first needle guide channel is arcuate
12 shaped.
- 13 33. The medical device of claim 31, further comprising a handle coupled to the body.
- 14 34. The medical device of claim 33, wherein the handle is coupled to the body by a
15 connector piece.
- 16 35. The medical device of claim 34, wherein the connector piece is bendable such that
17 it can be fixed in a variety of positions.
- 18 36. The medical device of claim 31, wherein a portion of the body is tapered.
- 19 37. The medical device of claim 31, further comprising:
20 one or more additional needle guide channels, each extending from its own first
21 needle guide channel opening formed in the body;
22 wherein the lumen and each of the one or more additional needle guide channels
23 are configured in operative relation with each other such that when a
24 length of suture is threaded through the lumen and is connected to a needle
25 that is backloaded into one of the one or more additional needle guide
26 channels, and the length of suture is pulled in a first additional direction,
27 the needle is advanced out of the additional needle guide channel in a
28 second additional direction,
29 wherein the first additional direction has a positive longitudinal component and
30 the second additional direction has a negative longitudinal component.

1 38. The medical device of claim 37, wherein one of the one or more additional needle
2 guide channels is arcuate shaped.

3 39. The medical device of claim 37, wherein each of the one or more additional
4 needle guide channels and the first needle guide channel are arcuate shaped.

5 40. The medical device of claim 37, wherein the first needle guide channel and each
6 of the one or more additional needle guide channels are circumferentially positioned
7 around the body.

8 41. The medical device of claim 40, wherein the first needle guide channel and each
9 of the one or more additional needle guide channels are equidistant from each other.

10 42. A medical device comprising:

11 a first member having a first handle and a first jaw, the first jaw having:

12 a first lumen extending from a first lumen opening formed in the first jaw to a

13 second lumen opening formed in the first jaw, the first lumen adapted to
14 receive a length of suture; and

15 a first needle guide channel extending from a first needle guide channel opening
16 formed in the first jaw; and

17 a second member having a second handle and a second jaw, the second member
18 pivotally connected to the first member;

19 wherein the first lumen and first needle guide channel are configured in operative
20 relation with each other such that a needle that is backloaded into the first
21 needle guide channel will be advanced out of the first needle guide
22 channel by pulling on a length of suture that is connected to the needle and
23 threaded through the first lumen.

24 43. The medical device of claim 42, wherein the first needle guide channel is arcuate.
25 shaped.

26 44. The medical device of claim 42, further comprising:

27 one or more additional needle guide channels, each extending from its own first
28 needle guide channel opening formed in the first jaw;

29 wherein each of the one or more additional needle guide channels is configured in
30 operative relation with the lumen such that a needle that is backloaded into
31 any of the one or more additional needle guide channels will be advanced

1 out of the additional needle guide channel by pulling on a length of suture
2 that is connected to the needle and threaded through the lumen.

3 45. The medical device of claim 44, wherein one of the one or more additional needle
4 guide channels is arcuate shaped.

5 46. The medical device of claim 44, wherein each of the one or more additional
6 needle guide channels and the first needle guide channel are arcuate shaped.

7 47. The medical device of claim 42, wherein the second jaw comprises:
8 a second lumen extending from a third lumen opening formed in the second jaw
9 to a fourth lumen opening formed in the second jaw, the second lumen
10 adapted to receive a length of suture; and
11 a second needle guide channel extending from a second needle guide channel
12 opening formed in the second jaw;
13 wherein the second lumen and second needle guide channel are configured in
14 operative relation with each other such that a needle that is backloaded
15 into the second needle guide channel will be advanced out of the second
16 needle guide channel by pulling on a length of suture that is connected to
17 the needle and threaded through the second lumen.

18 48. The medical device of claim 47, wherein the second needle guide channel is
19 arcuate shaped.

20 49. The medical device of claim 48, wherein the first and second needle guide
21 channels cross each other.

22 50. The medical device of claim 47, further comprising:
23 one or more additional needle guide channels, each extending from its own
24 second needle guide channel opening formed in the second jaw;
25 wherein each one or more additional needle guide channel is configured in
26 operative relation with the second lumen such that a needle that is
27 backloaded into any of the one or more additional needle guide channels
28 will be advanced out of the additional needle guide channel by pulling on
29 a length of suture that is connected to the needle and threaded through the
30 second lumen.

- 1 51. The medical device of claim 50, wherein one of the one or more additional needle
2 guide channels is arcuate shaped.
- 3 52. The medical device of claim 50, wherein each of the one or more additional
4 needle guide channels and the first needle guide channel are arcuate shaped.
- 5 53. A needle placement method comprising:
6 attaching a first length of suture to a first needle;
7 positioning the first needle; and
8 advancing the first length of suture in a first direction, thereby causing the needle
9 to move in a second direction, the first direction having a positive
10 longitudinal component and the second direction having a negative
11 longitudinal component.
- 12 54. The method of claim 53, further comprising:
13 attaching one or more additional lengths of suture to one or more additional
14 needles;
15 positioning the one or more additional needles; and
16 advancing one or more of the one or more additional length of sutures in a first
17 additional direction, thereby causing the one or more additional needles
18 attached to the advancing one or more additional lengths of sutures to
19 move in a second additional direction, the first direction having a positive
20 longitudinal component and the second additional direction having a
21 negative longitudinal component.
- 22 55. The method of claim 53, further comprising using a medical device to position the
23 first needle, the device comprising:
24 a body having a first end and a second end;
25 a lumen extending from a first lumen opening formed in the body to a second
26 lumen opening formed in the body, the lumen adapted to receive a length
27 of suture; and
28 a first needle guide channel formed within the body, the first needle guide channel
29 extending from a first needle guide channel opening formed in the body.
- 30 56. The method of claim 55, wherein the first needle guide channel is arcuate shaped.

1 57. The method of claim 55, wherein the device further comprises one or more
2 additional needle guide channels, each extending from its own first needle guide channel
3 opening formed in the body.

4 58. The method of claim 57, wherein one of the one or more additional needle guide
5 channels is arcuate shaped.

6 59. The method of claim 53, further comprising using a medical device to position the
7 first needle, the device comprising:

8 a first member having a first handle and a first jaw, the first jaw having;
9 a lumen extending through the first jaw from a first lumen opening formed in the
10 first jaw to a second lumen opening formed in the first jaw, the lumen
11 adapted to receive a length of suture, and
12 a first needle guide channel extending from a first needle guide channel opening
13 formed in the first jaw; and
14 a second member having a second handle and a second jaw, the second member
15 pivotally connected to the first member.

16 60. The method of claim 59, wherein the first needle guide channel is arcuate shaped.

17 61. The method of claim 59, wherein the first jaw further comprises one or more
18 additional needle guide channels formed in the first jaw, each of the one or more
19 additional needle guide channels extending from its own first opening formed in the first
20 jaw.

21 62. The method of claim 61, wherein one of the one or more additional needle guide
22 channels is arcuate shaped.

23 63. The method of claim 61, wherein each of the one or more additional needle guide
24 channels and the first needle guide channel are arcuate shaped.